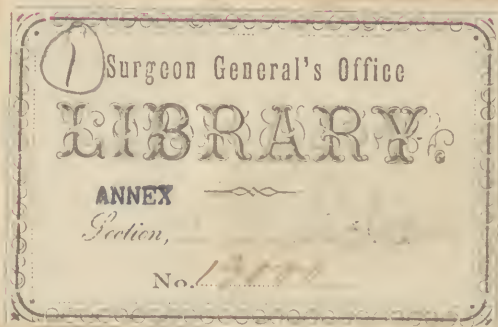


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# CHOLERA INFANTUM,

*With the assistance of  
the Author*

## DIARRHŒA AND ENTERO-COLITIS,

THEIR RELATIONS TO EACH OTHER, THEIR PATHOLOGY,  
AND THEIR TREATMENT.

BY

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# CHOLERA INFANTUM, DIARRHŒA AND ENTERO-COLITIS,

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Can any apology be necessary for calling the attention of the members of a Medical Society to the subject of Cholera Infantum? If so, it must be found in the fact that the last census of the United States shows that 3960 deaths out of 323,023 (that is more than one per cent.) are caused by it; and that out of 106 enumerated causes of death, this stands in rank, as to the number of its victims, the *sixteenth*. I know that a great deal has been written about it; that almost all our journals contain, every year, one or more articles, upon it; while the learned Society (the New York Academy of Medicine) which I have the honor here to represent in part, has lately crowned with a prize of one hundred dollars an essay upon it. Still, I beg your patient attention to the little I have to say; persuaded, as I am, of its importance. If I do not follow the beaten track—if I venture to make some suggestions as to errors in the nosology, the pathology, and the treatment of this disease, as commonly received—it is not from any desire to be captious, but from firm conviction of the truth of my position, slowly attained, gradually arrived at, never sought by me, but into which I have been forced.

I shall not so far presume upon the indulgence of the Society as to undertake here to recapitulate the history or to refer to the litera-

ture of Cholera Infantum. Here, at least, it is unnecessary, familiar as all the members of this Society must be with them; but I at once state the following propositions, as those generally received by the profession, or at least as generally given by our systematic writers upon the subject :—

1st. Cholera Infantum is a disease peculiar to this country, though not entirely unknown in Europe.

2d. That Cholera Infantum is almost entirely confined to large cities, and is rarely seen in the country.

3d. That the symptoms, course, and pathology of the disease, entitle it to a separate place in our nosological tables.

4th. That the treatment is to be distinct from that of diarrhœa on the one hand, and dysentery on the other.

5th. That “perhaps the most alarming symptoms are those of hydrocephalus, occurring in the advanced stages.”

What I have to say can be most conveniently arranged by discussing these propositions in the order in which I have enumerated them.

The first inquiry is as to the truth of the proposition, that Cholera Infantum is almost unknown in Europe, though frequent in this country. But before discussing this point let me first quote descriptions of the disease, so that we may have a certain fixed point of comparison as to what constitutes it. I use the language of others, rather than my own, for a specific purpose. One writer says :—

“When the attack comes on suddenly, it often commences with vomiting, and though in many instances the sickness does not recur frequently, yet sometimes the irritability of the stomach continues, for twenty-four or forty-eight hours, to be so extreme, that every drop of fluid taken is immediately rejected; and that frequent efforts at vomiting are made even when the stomach is empty. Violent relaxation of the bowels occurs almost simultaneously with the vomiting, and the child sometimes has as many as twenty or thirty evacuations, or even more, in the course of twenty-four hours. The motions are at first faecal; but they soon lose their natural character, and become intermixed with slime, often streaked with blood. At first they are abundant, and are often expelled with violence; but before long they become scanty, though sometimes they still gush out without much effort on the part of the child. The character of the evacuations again changes: in the severest cases they not only lose their faecal appearance, but become like dirty-green water, with which neither blood nor intestinal mucus is intermingled. Usually, however, when

the first violence of the purging has a little abated, although some serous stools may still be voided, yet the evacuations consist chiefly of intestinal mucus, intermixed with a little fæces, and more or less streaked with blood. These scanty mucus stools are generally expelled with much straining and difficulty ; a few drops of blood sometimes follow them ; and once or twice, at an early period of the attack, I have known an infant void as much as a table-spoonful of pure blood."

"The skin becomes dry and very hot, though unequally so ; the pulse is quickened, often very much so ; the head is heavy ; the child fretful and irritable if disturbed, though otherwise it lies drowsily in its nurse's lap, with its eyes half open, and scarcely closing the lids even when they are touched with the finger. Now and then, too, the disturbance of the nervous system at the commencement of one of these attacks of diarrhœa is so considerable, that a state of excitement alternates with one of stupor, that convulsions seem impending, and that there are distinct carpo-pedal contractions, or startings of the tendons of the wrist or fore-arm. The abdomen is usually full and tympanitic, but seldom very tender ; nor does the child seem to suffer much pain, though sometimes a degree of tormina appears to precede each action of the bowels."

Another writer says :—"After a day of slight disturbance, with fever and vomitings, the diarrhœa appears and becomes very abundant ; the face suddenly becomes changed, and the eyes excavated in the space of one night, like what it is said takes place in softening of the mucous membrane of the stomach, and the child rapidly succumbs. Recovery seldom takes place. In this case the symptoms gradually disappear or become prolonged.

"In most of the cases the commencement is less abrupt. The disease becomes developed, like catarrhal and spasmodic diarrhœa, without attracting much attention. The child is indisposed and has slight relaxation of the bowels. The symptoms persist, and then the cause is discovered. They increase and become aggravated if their progress cannot be arrested. The patient daily becomes weaker, and gently arrives at that degree of weakness and emaciation precursory of death.

"It is only in exceptional cases that this disease rapidly runs through its stages. It usually lasts fifteen days : the mean term necessary to the cure. It sometimes lasts two or three months. Few children die before the completion of the tenth day. The greater number succumb by the end of a month. . . . Amongst

those who are cured the disease scarcely ever extends beyond the third week."

Now I respectfully submit it to the members of this Society, if these are not good descriptions, accurate as can be drawn, of the disease which we know as Cholera Infantum. And yet both are from European writers, drawing from their own experience, and not quoting the language of others. One is West,\* of London, and the other Bouchut,† of Paris; and I have made these extracts to show that the first proposition, though so generally received, is an error. True, neither writer uses the words Cholera Infantum, but calls it, the one (West) *inflammatory diarrhœa*, the other (Bouchut) *entero-colitis*, and to those cases which are most marked he gives the name of *choleric-form entero-colitis*. Both of these writers speak of the rapid termination of the disease, that is within two or three days from its commencement, as being rare in their countries; but so it is here, if we count the commencement of the disease to be the occurrence of diarrhœa, as I believe it to be, and shall attempt to show hereafter.

For the present I pass to the consideration of the second proposition, namely, "that this disease is chiefly prevalent in large cities, rarely occurring in the country."

I refer again to the mortality statistics of our last census upon this point. Here let me say that I am aware of the many sources of error to which we are exposed in basing any proposition upon these returns. Still the errors in the main counteract each other. In regard to this disease there is perhaps less occasion for fallacy, from the fact that the name is usually given by the medical attendant, "Summer complaint" being the more common term in popular use for diarrhœa. From these returns it appears that every State in the Union sends in its quota of cases of Cholera Infantum to swell the total to 3,960.‡ But one section of one State (the southern of

\* Treatise on Diseases of Children. pp. 388, 389.

† Bird's Translation. p. 469.

‡ The number of deaths given for each State are as follows:

Alabama, . . . . .	42	Louisiana, . . . . .	27	Pennsylvania, . . . .	260
Arkansas, . . . . .	14	Maine, . . . . .	52	South Carolina, . . .	64
California, . . . . .	1	Maryland, . . . . .	166	Tennessee, . . . . .	17
District of Columbia,	25	Massachusetts, . . . .	331	Texas, . . . . .	12
Connecticut, . . . . .	85	Michigan, . . . . .	13	Vermont, . . . . .	6
Delaware, . . . . .	8	Mississippi, . . . . .	114	Virginia, . . . . .	150
Florida, . . . . .	10	Missouri, . . . . .	83	Wisconsin, . . . . .	14
Georgia, . . . . .	75	New Hampshire, . . . .	47	Minnesota, . . . . .	2
Illinois, . . . . .	141	New Jersey, . . . . .	105	New Mexico, . . . . .	—
Indiana, . . . . .	156	New York, . . . . .	447	Oregon, . . . . .	—
Iowa, . . . . .	28	North Carolina, . . . .	74	Utah, . . . . .	—
Kentucky, . . . . .	163	Ohio, . . . . .	232		



Texas) is entirely exempt ; while of the territories Minnesota reports two cases of Cholera Infantum in a total of 27 deaths, and Oregon one of a total of 47.

But again : there are a few States in which the districts were so divided as that one of them should be made up chiefly or entirely of a city ; and we are thus enabled to compare the proportion of this disease as reported in the city to that in the rest of the State. These States are New York, Pennsylvania, Massachusetts, and Louisiana. From these returns it appears that in this State the total of deaths from Cholera Infantum is 447, of which only 257 were in the city of New York. In Pennsylvania there were 260 deaths of which 137 were in Philadelphia. In Massachusetts there were 331 deaths of which only 50 were in Suffolk county, which is almost entirely made up of Boston. In Louisiana 27 deaths from this cause give only 7 to New Orleans. Thus in four States, representing New England, the Southern and the Middle States, including the larger cities, we have for totals 451 deaths from Cholera Infantum in the large cities to 614 deaths from the same cause in the remainder of the States. That is about three-fifths of the deaths from this cause were out of the largest cities. So far then as the census goes we are justified in saying that the disease numbers quite as many victims in the country as in the city, or, at any rate, that a disease known to country practitioners as Cholera Infantum is as fatal in the country as the city. I appeal to gentlemen who practice in the country, especially in regions which are level, with a sandy soil and shut in by hills, whether or not the symptoms described by our writers as being those of Cholera Infantum are not constantly seen by them during the hot weather. I know that the best marked cases which have ever fallen under my observation are those seen by me in New Hampshire and Massachusetts, and no symptom described by city writers was absent from them. I contend then, that the second proposition, though generally received, is incorrect.

“The third proposition is that the symptoms, course, and pathology of the disease, are peculiar ; and entitle it to a separate place in nosological tables.”

The characteristic features of Cholera Infantum are thus defined by Dr. J. Forsyth Meigs, whose remarks on this disease are, on the whole, among the best that have been published in this country. “These are its occurrence in very young children, and in the Summer months ; the evidences in the early stage of violent irritation and hyper-secretion of the gastro-intestinal mucous surface, and at a later

period of inflammation, ulceration, softening and thickening of the same surface, particularly of the ilium and large intestine ; its chief symptoms are vomiting and purging ; fever, generally of a remittent type, varying often with collapse ; rapid emaciation ; and towards the close, violent cerebral symptoms." (Meigs, p. 28.) Authors describe affections of the bowels under three names, viz : simple diarrhœa, Cholera Infantum, and entero-colitis, and each one of these may be accompanied by these chief symptoms, to wit : vomiting and purging, remitting fever, collapse, emaciation, and "violent cerebral symptoms." How then can it be known when diarrhœa ceases and Cholera Infantum begins ; or when does entero-colitis become Cholera Infantum. The fact is, that the continued and simple diarrhœa, when aggravated without any change in its nature, becomes violent, so that it is called Cholera Infantum. Entero-colitis commencing suddenly with vomiting and purging, is Cholera Infantum in common professional parlance, but no more a separate disease than is the first stage of pneumonia a separate disease from the last. It is rarely the case, if ever, that a simple diarrhœa runs on to be severe without the occurrence of vomiting, feverish exacerbations, collapse, and the other enumerated symptoms, and it is therefore necessary to say that if Cholera Infantum is a separate and distinct disease, it follows diarrhœa very frequently. On the other hand, entero-colitis is usually attended by vomiting as well as purging, and is thus said to be preceded by Cholera Infantum. So it is with the pathology of the disease. It is entirely impossible for any one to say, simply by an inspection of the post mortem appearances, whether or not the patient had died of Cholera Infantum or simple diarrhœa on the one hand, or on the other to distinguish between Cholera Infantum and entero-colitis. One school of writers have dwelt much on the altered condition of the liver, which is said to be enormously enlarged in some cases, and with all the intermediate shades of departure from health. But this scapegoat for so many evils is not justly blamed. If Cholera Infantum is a peculiar and distinct disease, it is eminently an acute one, for it is improper to assign to it all that train of symptoms which drag after it for months. In this time the liver cannot enlarge, for it is not a sponge which can be filled with blood and be made to swell up and puff itself out to occupy half of the abdomen in three days or in three weeks—as seems to be intimated by several writers. This error must have arisen from neglecting to take into account the fact that in infancy the liver is proportionably much larger than in more mature life. As I have said of the symptoms, so it may be said of the pathology—it is impos-

sible to draw a line on the one hand between Cholera Infantum and simple diarrhœa, and on the other between Cholera Infantum and entero-colitis. The disease has no distinct pathology, as will be evident if we compare the descriptions given of the pathology of this disease by our writers with those given by European writers of the pathology of diarrhœa and entero-colitis. I claim then, that the third proposition usually received, is incorrect, and that there are no separate symptoms, course, and pathology of this disease, but that Cholera Infantum is in fact a name given to a particular condition arising in other diseases.

Of course, if my position is correct, the fourth proposition, viz : that the treatment of the disease requires to be peculiar, goes with the third, for if there are no peculiar symptoms, course, and pathology, there is no separate and peculiar treatment. The proposition was stated, however, to express the common belief upon the subject, and I suppose I am correct in saying that nine-tenths of the profession would say so. As large a proportion would insist upon the necessity of using calomel or some other preparation of mercury, and that with more or less freedom. Some use it often and in large doses, some in full doses and but once, others use smaller doses, while still others approach the infinitesimals in appearance though not in reality. The doses vary from five grains to the sixteenth of a grain, but calomel is the desideratum with them, and calomel must be used. To cite my authorities for this, would be to cite almost every writer upon the subject ; few, if indeed any writers in our own country being content to advise entire abstinence from the use of this drug. Many of them insist as strongly upon the disuse of astringents, and on this point too, I am at issue with them. I have no particular fondness for astringents, neither have I any dislike of calomel, much less a prejudice against so excellent a remedy. But it certainly is a very potent one even in small doses, especially when given frequently, and I do not hesitate to say that it has often done in this disease great and grave injury.

The 5th proposition, viz : that "perhaps the most alarming symptoms are those of hydrocephalus occurring in the advanced stages," is in the very words used by Dr. George B. Wood,\* in his excellent treatise on the Theory and Practice of Medicine, and is, I suppose, expressive of the common opinion. I confess that I should not have ventured to make such an assertion a year ago, for the simple reason that after the clear descriptions of the actual cause of the cere-

\* Practice of Medicine, vol. 1, p. 700.

bral symptoms which Marshall Hall gave more than fifteen years ago, and which have been since repeated by Goode, and more lately by West, it would seem improbable that the condition of anæmia or exhaustion should not be recognized as the cause. That it is not so, the prize essay to which I have before alluded, bears ample testimony, while the occasional favorable notices of that publication in which even eagle-eyed reviewers do not detect this error, give farther confirmation of it. *Hydrocephaloid* is the actual condition, not *hydrocephalic*, and that antiphlogistics (as leeching, blistering, &c.) have not been successful in the essayist's hands, is no wonder. The cool head; the depressed fontanelle, the previous or continuing exhaustive disease; the rapid improvement under the use of tonics and stimulants, all of these should have opened the eyes of practitioners to the actual cause of the symptoms. This is neither the place in which, nor the audience to which I ought to repeat what has been so well said by others; but I may simply urge any who have not become fully convinced of the correctness of the distinction, to read again what West has said so well, and to study carefully the next cases of the disease which come under their charge.

It would not be proper for me, having said so much that is negative, to refrain from a positive statement of my own opinions concerning the topics on which I have touched.

Diarrhœa in children (that is, too frequent and too fluid evacuations from the bowels) may be of all grades, from the slightest to the most grave. Especially apt to affect teething children, particularly those that are weaned, and to appear during the hot season, its symptoms (in general the same) may at any moment be aggravated and exaggerated by the continuance of the very causes that produced it. Nausea is a constant accompaniment of the diarrhœa, and the aggravation of the diarrhœa, whether gradual or sudden, is attended by a similar increase of the nausea, vomiting soon succeeding. If then a rapid or sudden increase of the diarrhœa occurs, which is always attended by an increase of the watery portions of the dejections, it is almost inevitable that vomiting should occur. Excessive thirst, intolerance of the blandest food, rapid prostration and emaciation are the accompaniments and results of this condition. Unfavorable hygienic conditions serve to increase the liability of children to the disease, while they at the same time retard, if they do not entirely prevent recovery from it. Pathological Anatomy shows to us throughout a continuation of the same condition, increasing in severity and gravity with the corresponding increase in the symptoms.



When death occurs from the exhaustion produced by the profuse vomiting and diarrhœa, a condition to which is given in this country the name of Cholera Infantum, we find the intestines to contain more or less of a soft, usually light, yellow fecal matter, and the stomach a fluid resembling a thin gruel. The walls of the stomach are natural, unless the epithelial lining be a little too easily removed,—the epithelial lining of the small intestine, and sometimes of the large, being in a similar state. The walls of the intestines are almost translucent, bloodless, and apparently thin. Throughout their whole extent the solitary and agglomerated glands are very prominent, setting up almost like beads from the surface. The mesenteric glands are not changed. The liver is pale and anæmic, the gall bladder containing more or less of thin bile. General anæmia of the organs is the only other observable change from health. The brain itself is in the same condition, a passive congestion of some of the larger veins of its base being the utmost change notable in the blood-vessels. Where the prostration has continued a long time, we have a little serous fluid in the cavity of the large ventricles. Such is a general view of the pathological anatomy of these cases. The pathologist must therefore be content with saying that the death is from exhaustion, and not from anatomical lesions of the organs. From the prominence of the solitary and agglomerated glands, it has been supposed that they are the seat of the disease, but a careful inspection will show that they are only filled with their peculiar secretion. Being without outlet, as Kolliker and others have distinctly shown, their excessive secretion only distends them, while the exsanguine condition of the neighboring tissues thins *them*, and thus gives to every independent prominence like the follicles, still greater exaggeration. Hypersecretion is the only thing of which we have any evidence in the bowels, and hyper-secretion will account for the symptoms and the death. Back of this we must confess we cannot go, and irritation, inflammation, nervous force, or anything else may be invoked to explain it. Evidence of either we do not have.

If instead of this sudden termination, the case runs along for weeks or months, we then have in addition to the other appearances abrasions, and even ulcerations in some rare cases, of the mucous surface. Punctate injection more or less abundant, and more or less general, though usually quite limited, is visible. The solitary and agglomerated glands have either disappeared or are in the same condition of distension as that before pointed out. If it be the former, there results one of those depressions which are described as ulcer a-

tions, but which are without the characters of an ulcer. Occasionally there may be seen patches of an apparently uniform redness, but closer examination shows that it still is of the punctate form. This is the condition to which, following the European writers, I give the name of enterocolitis. But this follows directly upon the continuance of aggravated diarrhœa. Other diseases may of course complicate it, but I speak now of pure and simple cases, of which many may be noted by every one engaged in the treatment of young children.

The localities in which the disease most frequently occurs, as well as the class of patients who are especially liable to it, point out the influences against which we are to guard. Although the disease is marked, in many cases, by febrile exacerbations early arising, there is no reason to suppose it to be allied to periodical diseases of a malarious character. I have seen it as evident in regions where no intermittent fevers are found, as in those regions which abound in them. It is noteworthy that these exacerbations are not of a high grade of fever; and one who looks for a frequent and strong pulse, with flushed features, and the other usual marks of fever, will not find them. Instead of this, there is a very quick and frequent pulse and some increase of the heat. It is usually quite transient in such cases. In those of a more chronic character it is often more protracted and rises higher; that is, this is more marked in enterocolitis than it is in diarrhœa. The impure air of cities is justly, as well as generally, blamed for much of the disease; but it is not the impure air which has the largest influence. The classes of patients who are particularly exposed to it in large cities, are those who are also under the most unfavorable hygienic conditions. Poor and squalid, the mother must turn every moment to a good account in making a living; or else, drunken and vicious, she spends in dissipation the time which should be given to her infant. In either case, her impoverished and scanty milk compels her to feed her child, even if another pregnancy does not urge to the same course. Poor cow's milk, crude gruels, and panadas, or bits of "every thing that is going," are the materials poured into the intestines, and these the child can not properly digest. The house in which they live is crowded, and close, and damp; ventilation is a thing unknown or uncared for, and bathing is a luxury that is rarely indulged. Dentition, too, complicates matters; for in no class are the disturbances produced by it greater, and in no class is there more frequent or strenuous objection to lancing the gums. In addition to this, insufficient light reaches the child, and in its etiolated state it is still more unable to contend

with other unfavorable influences. But I have shown that it is not confined to large cities. The proportion of poor persons increases more rapidly in large cities than in direct ratio to the increase of population, and therefore the disease prevails in larger proportion ordinarily. This is not uniformly so, however, and the census to which I have so repeatedly referred, shows this in one instance quite singularly. In Massachusetts the whole number of deaths from Cholera Infantum is reported as 331, of which only 50 were in Suffolk county, which is almost synonymous with Boston, the single town of Chelsea being included within its limits. Now Essex and Middlesex counties, which make another district, and have about the same population, give 113 deaths from Cholera Infantum—more than twice as many. Boston, it is well known, is so built on hills that it is thoroughly drained; and, at first sight, it might be thought that this was the cause of the slight mortality. But Essex and Middlesex counties are not deficient in drainage, are not malarious, and are commonly considered as healthy districts as any. But these counties abound in localities in which the soil is light and porous, perhaps sandy, and where these lie upon the rivers, especially the Merrimae, they are shut in by hills at a little distance from the river. Here the heat during the middle of the day is intense, and often continues through the night. Under these conditions severe forms of diarrhœa develop themselves rapidly; that is, if it be preferred, Cholera Infantum prevails, and fatally. The same is true all up the Merrimae river wherever these conditions unite. Manchester, N. H., where, from the very sandy nature of the soil, and the rapid growth of the town, all these influences are in excess, is swept with this disease every Summer, to such an extent that a similar visitation in New York would be more terrible to children than the most malignant yellow fever. The same is true of Concord and Nashua, though not to quite the same extent, for the conditions are somewhat less aggravated. This fact, and the want of similar localities in Vermont, seem to me to account for the notable difference in the proportion of deaths from this cause, given in the census—Vermont having six and New Hampshire forty-seven—for in other respects the situation of the two States and the hygienic conditions of their people are very similar. The exemption of Boston I believe to be largely due to the refreshing sea breezes which prevail during the day and reduce the air to a delightful temperature. Serious as an East wind in that city is to delicate persons in the month of March, in the month of July it is exceedingly refreshing.

But I hasten to close my remarks, already too protracted, I fear, by a discussion of the treatment which I believe to be best adapted to the disease.

In the first place, I would lay it down as a rule, that diarrhœa is not to be allowed to run on in teething children. It is to be controlled, not to the extent of producing constipation, but to that extent that it ceases to be strictly a diarrhœa. Division of the gums in a proper manner and always when called for ; the use of chalk mixture, alternating occasionally with small doses of the aromatic syrup of rhubarb ; early resort to tonics, carminatives, and stimulants, together with the wearing of flannels next the skin, especially so as to cover the abdomen completely, are the remedies. Careful diet (which should be the mother's milk if possible), regular exercise in the open air during the early part of the day, and protection from the excessive heat of noon, are the hygienic necessities. Daily warm baths and frictions, the baths to be once every week of salt water, are also important. And under these influences very many children are kept safe from the dangers of the more advanced disease.

If the diarrhœa is more aggravated, though without severe vomiting, there may be given chalk mixture, with some carminative, astringent and tonic ; my own preference being for a combination of chalk mixture, tincture of catechu, compound tincture of cardamoms, and compound tincture of cinchona. To this mixture I sometimes add a little paregoric. At the same time the flannel which covers the abdomen may be sprinkled with brandy or tincture of camphor.

When vomiting occurs with profuse discharges, that is, when the stage arrives to which the name Cholera Infantum is given ; if it comes suddenly, and there is a suspicion of undigested food in the bowels, a mild purgative may be given, and the best is syrup of rhubarb. This, however, should not be attempted more than once, unless the stomach has become quiet. Many, it is well known, prefer calomel in a cathartic dose, and it is easily taken and does not nauseate by its taste, but it is, to my thinking, too violent and irritating a cathartic. The vomiting should be allayed by the use of bits of ice, (not teaspoonfuls of cold water, for that will not do it so rapidly,) which may be swallowed whole if desired ; by mustard poultices, small ones, to the pit of the stomach ; by quiet and not attempting to fill the stomach with food. The warm baths should be continued ; mild opiate injections or suppositories may be used, and an early resort be had to stimulants when symptoms of exhaustion appear. These may be given in almost any form, certainly in any



that agrees with the stomach. At one time they will be best borne cold, at another hot ; sometimes diluted with water only, sometimes with milk, as punch or whey ; but all of these forms are to be selected from according to the occasion. At times these will not stay upon the stomach in any form, and then it is that bathing with diluted spirits should be carefully attended to. In this disease it is important to continue to try to save life as long as a spark of it remains, for, from the most unpromising condition recovery sometimes rewards the diligent and faithful attendant.

When the disease becomes chronic it is necessary, to pursue a similar, and yet in some respects, a different treatment. The chief difference is in the mode of procedure when there occurs a series of bloody discharges. That is when the colitis is more severe and prominent, and when the condition approaches that of dysentery. For several years, I have in this state of affairs, used with much satisfaction, a mixture of about ten grains of blue mass rubbed up in two drachms of syrup of rhubarb, to which is added one-half teaspoonful of paregoric and four ounces of chalk mixture. Of this, a teaspoonful every two or three hours, is the dose. The blue mass certainly does not act like the calomel, not producing, in purgative doses, so great prostration, and in small doses it does not lessen the proportion of fibrin in the blood, as is the case with calomel. Hence calomel is the better agent when the intention is to arrest the exudation of plastic deposits, as in the inflammation of serous membranes. It is probable that the portion of mercury in the blue mass which becomes converted into the black oxide, is the beneficial agent, and in this idea I have been confirmed, by noticing the effects of the black oxide of mercury prepared by means of ammonia. This, which some homœopathists use under the name of "soluble mercury," is a valuable remedy, and is worthy of more general attention, from its good effect and from the facility with which it is taken by children when rubbed up with sugar. It is of course understood that I do not recommend any dilution for the sake of potentization.

In this state opiates, if none are contained in this mixture, are often of very great benefit when given with discretion, that is, in proper dose not too frequently repeated. Notwithstanding the prejudice against their use, I hardly know what we could do without them ; certainly they expedite recovery. Another prejudice exists against the use of chalk mixture, but I have yet to see or to learn of one who has seen the concretions ascribed to it after use in this disease. It should not be constantly continued for months, for the condition

which calls for it does not require that. I do not dare to say how large a quantity of it I have prescribed during the last Summer only, but it has been very large, and I have yet to see its bad effects.

Exposure to the fresh air is still more important, if that be possible, than ever, and it should be regular and constant. I could speak of very striking instances of its benefits, but I fear I become wearisome. It does not absolutely require that the child should be taken into the country. Many of my patients are sent to the ferries to cross them so that the cool fresh sea-breeze may fan them, and it acts sometimes like magic to raise their drooping heads. Of bathing, too, in warm water, I could give illustrations, the most striking being where a gentleman, whose child was under another practitioner's care, ventured to direct one leg to be washed hastily, contrary to the physician's advice, although the child had been sick several weeks. He distinctly affirms, that the leg so washed, got so much the start of the other, which was not similarly treated for a few days, that it took the latter a long time to catch up with it in strength and in flesh.

In conclusion I present these propositions as expressing my views of this matter, in contrast to those which I first gave as expressive of the opinions more commonly entertained.

1. The condition to which the name of Cholera Infantum is given, is not a separate and peculiar disease, but a collection of symptoms attendant on certain stages of other diseases.

2. This condition is recognized by European authors in their treatises, though very properly it does not receive a separate title.

3. That the principles of its treatment are the same as those of diarrhœa and enterocolitis.

4. That Hydrocephalus is rarely if ever an attendant or sequent of it, but that the hydrocephaloid disease is very usual.

# CHOLERA INFANTUM.

## DIARRHŒA AND ENTERO-COLITIS,

THEIR RELATIONS TO EACH OTHER, THEIR PATHOLOGY,  
AND THEIR TREATMENT.

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